

Thermique™ Heated Glass for Office Buildings

An Introduction

In business, comfort is critical. It allows you to focus and perform at your best. When employees feel uncomfortable, productivity begins to drop. When customers feel uncomfortable, the situation is even worse.

Maintaining a consistent, comfortable indoor environment in an office building can be a major architectural challenge. In winter weather, traditional heating systems often cannot reach every area, leaving some workers in the cold.

Windows only make the problem worse. Cold glass will actively steal heat from objects or people up to ten feet away. It will also chill the air, creating a temperature imbalance in the room. This imbalance can lead to convective air currents, or drafts, throughout an entire building. Chilly drafts force the building's heating system to cycle on more often, wasting energy.

All of these problems are solved with Thermique™ heated glass. Your windows will no longer cause chills or drafts. Workers and guests in your office building will feel more comfortable. Oftentimes, you can even lower the thermostat, resulting in an energy savings that may exceed the amount of electricity required to heat the glass. In other words, Thermique heated glass can actually reduce your overall energy use.

Comfort impacts productivity. Eliminate chills and drafts with Thermique heated glass.

Active Glass, Inc.

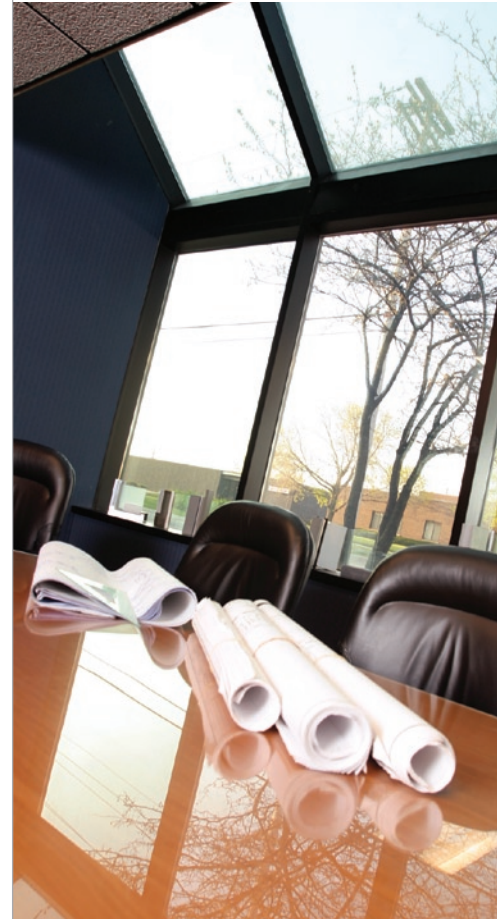
Our First Customers

In 2005, Active Glass, Inc., became the first company in North America to install new windows with Thermique heated glass technology at its corporate headquarters. More than three years later, Active Glass is proud to report the technology has functioned flawlessly.

"They work as well today as when we first installed them," said Al Shapiro, CEO of Active Glass. "Thermique technology has proven itself to be very reliable."

Thermique Technologies, LLC, selected Active Glass to be the premier office site for its heated windows because the company has the expertise and reputation to provide a detailed, independent analysis of the windows' performance. Headquartered just outside Chicago, Ill., Active Glass is a leading fabricator, installer, and distributor of window frames and doorframes for the glass industry.

Heated windows were installed throughout Active Glass headquarters, including a conference room, an open office area, the entryway, Mr. Shapiro's office, and the office of CFO Ellie Hansen.



"Once you try it, you can't go back to ordinary glass windows. I wouldn't want to be without these windows again."

— Al Shapiro
CEO, Active Glass

"After three years with Thermique heated glass, I am convinced that this technology is both reliable and cost effective," said Shapiro.



"I've worked in this building since 1978," said Hansen. "I was always cold before we installed the heated windows. Now I'm happy. Even my feet are warm!"

The Benefits

The benefits of Thermique heated glass were quickly apparent to the staff at Active Glass. "The technology is almost too good to be true," said Shapiro. "Once you try it, you can't go back to ordinary glass windows."

Temperatures in the Chicago area are well below freezing for much of the winter. In previous years, Shapiro needed a jacket when sitting behind his desk because his office was so cold. Today, no one needs to wear a coat indoors at Active Glass, and the company was able to remove an unsightly (and inefficient) baseboard heater from several areas of the building.

"For most of the year, the baseboard heater would be covered in dust," recalled Hansen. "The first time we'd turn it on in the winter, I'd always get sick. I'm glad to be rid of it."

Hansen has a wall switch in her office that allows her to adjust the temperature of the glass to low, medium or high. Since her seat is close to the glass, she typically keeps her windows on the low setting unless the outside temperature is particularly cold.

Although Thermique technology is not intended to be the building's only heat source, Active Glass discovered that its windows were very effective at keeping offices and the conference room at a comfortable temperature when the building's

heating system broke down. Rooms with electrically heated windows remained perfectly comfortable for conducting business despite an outside temperature of 18° F.

Energy Savings

Another benefit of Thermique technology is its effect on the building's heating bills. "Our heating blowers can't reach every location in the building evenly," said Shapiro. "There used to be cold spots in the conference room, my office, and other places. Our heated windows have eliminated that problem, which allows me to keep the thermostat at a lower setting. I usually keep it at 70° F now, instead of 72° or 74° F."

By lowering the thermostat, Active Glass is reducing its gas bill in the winter months. Preliminary independent studies indicate that installing windows with Thermique heated glass can reduce a building's overall energy use. More advanced testing is currently underway to verify the exact energy savings.

Satisfaction

"After three years with Thermique heated glass, I am convinced that this technology is both reliable and cost effective," said Shapiro. "And I'm in the glass business. If there were a problem, I'd see it immediately."

Active Glass specializes in storefronts and entrances, windows, glazing, and glazed curtainwalls. According to Shapiro, the installation of heated windows has impressed the company's clients as well as its staff.

"Clients remember how cold the conference room

used to be. They're impressed to find out it's heated windows that have made all the difference," said Shapiro. "I wouldn't want to be without these windows again."

DA | AD

Architects In Action

Dryden Abernathy Architecture Design (DA | AD) in Nashville, Tennessee, specializes in designing innovative solutions to unique architectural challenges. The founders of the company, John Abernathy and Nick Dryden, had to look no further than their own headquarters to find a challenge worthy of their expertise.

Located in a converted auto shop, the design firm's headquarters has a hip, modern flavor that appeals to its clientele. However, the structure itself is little more than a cavernous, two-story concrete box. Apart from a few offices on the north side of the building, the employees are located in a vast, open workspace in the middle of what was previously the auto shop's garage.

In warmer months, employees were happy to work in an open area without interior walls. In the winter, however, the garage area filled with chilly drafts. The building's heating system could not solve the problem. All vents were mounted to the ceiling at least 12 feet above anyone's head.

"There was no good way to heat certain parts of the building," said Abernathy. "When the weather turned cold, it was just uncomfortable.

Cold Conditions

As experts in architecture and design, Dryden and Abernathy immediately identified the source of the cold air and discomfort. What had been a two-story opening for cars to enter the garage was now a stylish wall of windows. The cold glass in the windows was stealing heat from the workspace, generating cold air, and creating chilly drafts throughout the entire garage area.

Cold working conditions were more than just a nuisance at DA | AD.

"Comfort affects productivity. There's no doubt about it," said Abernathy. "We needed a cost-effective way to supplement our heating system in order to eliminate the problems being created by our windows."

In 2005, DA | AD approached Thermique Technologies,



LLC, about the benefits of its proprietary heated glass for architectural windows. The design firm had two motives: to find a solution to its own heating problems and to explore a new technology for its architectural designs.

The Only Solution

The garage door opening at DA | AD had been filled in with seven large window units arranged into three rows. Two windows, approximately 4' x 4' and 4' x 7' in size, formed the bottom row. Abernathy and Dryden decided to replace these two units with new windows with Thermique heated glass.

"Typically, it is unnecessary to heat windows that are positioned above the height of an average person," explained George Usinowicz, architectural representative for Thermique Technologies. "You'll receive the full benefits of Thermique technology from one row of heated windows no matter how tall the room is."

In the DA | AD installation, the heated window units were constructed with one pane of Thermique

heated glass for the interior life and one pane of frosted privacy glass for the exterior life. Adjusting the glass temperature is as simple as



twisting a knob on the wall. Thermique Technologies is the only company to earn UL® approval to provide heated glass technology for architectural use in the United States.

"No other technology could have solved our problem. The drafts and chills are gone," said Abernathy.

The Results

The results at DA | AD have been "amazing," according to Abernathy.

"We have a lot of tall open space, which was a major challenge," he said. "Our Thermique heated glass keeps us consistently warm throughout the year. No other technology could have solved our problem. Now, the drafts and chills are gone. Everyone at DA | AD has been thrilled with the windows."

The design firm's clients have been impressed as well. Previously, the coldest part of the building was the conference area directly behind the front windows. The design firm uses this area for client meetings at least three times a week.

"Believe me, they've noticed the difference," said Abernathy. "A number of clients immediately remarked on the change. They were used to being cold, and all of a sudden the building was perfectly comfortable."

Ahead of the Pack

DA | AD is the first architectural design firm in the southern U.S. to adopt Thermique heated glass technology, giving the company not only a more comfortable work environment but also a differentiating edge over the competition.

"We're introducing our clients to something entirely new, which is something very few architects have the privilege to do," said Abernathy.

"We used to worry about inviting clients and potential clients to come sit down in our conference area during the winter months," he added. "Now, we can't wait to bring them into the conference area so that we can show off the heated glass."

About Thermique Technologies

Combining more than 60 years of experience with cutting-edge expertise, Thermique Technologies, LLC, is today's premier developer of heated glass technology. Thermique heated glass is utilized in heated windows, glass towel warmers, and heated food service cabinets. Headquartered in Chicago, Ill., Thermique Technologies is a wholly owned subsidiary of Engineered Glass Products (EGP).

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